

***Ptilotus humifusus*, a new species of Amaranthaceae from Queensland**

by

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Abstract:

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A new *Ptilotus* from Queensland, *P. humifusus* Benl sp. nov., is described and figured with a photograph of the holotype and analytical drawings of the flower. Type specimens are cited and the new taxon is compared with *P. procumbens* Benl, its closest congener.

***Ptilotus humifusus* Benl sp. nov. (Figs. 1 and 2)**

Herba annua pluricaulis mox procumbens. Caules usque ad 35 cm et ultra graciles caespitosi, e radice fusiformi orientes, primo erecti dein patentes, (glauco-)virides, lineis pallidioribus partim rubescentibus angulati-striati, ad circa 20 cm longi, parce ramosi atque foliati; in statu juvenili pubescentes, pilis albidis distincte nodulosis dense induti dein glabrescentes. Rami laterales divergentes, summi apicem caulis superantes, vetustiores pedunculos formantes et in rhachides spicarum transeuntes. Folia coriacea integerrima; radicalia plus minusve deficientia. Folia caulina alterna ad circa 4,5 x 0,6 cm, basi petioliformi (sub)sessilia; lamina (lineari-) lanceolata vel anguste elliptica breviter aristata, primo utrimque villosa (pilis ut in caulibus) mox glabrata, nervo mediano subtile conspicue prominenti. Spicae confertiflorae solitariae, caules ramosque terminantes, juveniles conicae circiter 1 cm diametro, florentes apiculati-cylindraceae, in holotypo usque ad 2,7 cm longae; rhachis pilis nodulosis tomentosa. Flores breviter pedicellati ad 50 et ultra congesti, albidi-pilosi visu violacei-rosei denique pallescentes. Bractee bracteolaeque hyalino-scariosae, glaberrimae, superstites, inaequales: bractee ovati-lanceolatae; bracteolae maiores subcordati-orbiculares, perianthio arcte appressae. Perianthium 5-partitum circa 6 mm longum, primo (rigidi-)erectum demum tepalis divergentibus campanulati-patens, apicibus nudis tepalorum lucidum, ima basi extus hirsuta contractum. Perianthii segmenta libera, inferne distincte tricostrata, superne marginibus scariosis late limbata, juvenilia manifeste bicolorata: areola mediana incrassata nervis lateralibus exacte circumscripta atropurpurea demum viridula; margines in apice confluentes laete purpureae ad (violacei-)roseae, post anthesin dilute stramineae. Tepala omnia in dorso villosi-plumosa - pubescentia apices vix attingente -, pilis strictis oblique erectis diversiformibus, in parte supera spinulosi-articulatis, in parte infera brevioribus obscure nodulosis; 2 exteriora linearia, apice truncato et erosi-denticulato, intus glaberrima; 3 interiora lineari-subulata haud breviora at angustiora (sub)acuta (apice interdum leviter incurvato), intus inferne pilis crispis tenuiter articulatis inter se intricatis obsessa. Stamina 5 aequalia fertilia; filamenta ad circiter 2,3 mm longa ligulata, inferne sensim ad 0,2 mm dilatata, in cupulam humilem imae basi

perianthii tantum insidentem transeuntia; pseudostaminodia interjecta nulla; antherae ellipsoideae dilute flavae. Gynoecium omnino glabrum; ovarium subclavatum sessile, circa 1,2 mm longum; stylus indivisus longior gracilis rectus excentricus; stigma capitellatum papillosum.

Species nova ad *Ptilotum procumbentem* Benl appropinquans, sed haec species ob spicas maturas conicas, bracteas fuscas pilosas, tepala in apice recurvata, ob 4 stamina tantum perfecta, cupulam staminalem nimis longam et stylum brevem a *Ptiloto humifuso* manifeste differt.

Holotypus: Warrego Region, 40 km S of Cunnamulla, 145°44'E, 28°19'S, Qld, 29 July 1983, P. E. Conrick 1484 (AD 98413311, phot. M; isotypi: AD, CANB, M).

Mat-forming ephemeral herb (Fig. 1) of spreading habit to c. 40 cm across, closely pubescent in vegetative parts and outer floral organs when young. Up to about 35 shoots arising tuft-like from a slender tap-root of c. 5 mm in diameter, at first upright then sprawling to form a rosette and curved slightly upwards at their floriferous tips; tenuous by c. 1 to 2 mm thick near ground-level, attaining lengths of up to and over 20 cm when fully grown, greyish green turning glaucous-green, finely striate with paler (sporadically reddish-tinged) angular ribs, evenly clothed with a white indument of straight to slightly curved nodulous hairs 0,8-1,1 mm long later confined to apical portions and leaf-axils only. The (semi-)prostrate stems simple or openly branched, sparsely leafy throughout. Branches up to 5 (6) per stem and to c. 12 cm long, divaricate or ascending, obtusely 4- to 6-angled and hairy like main stem. Apices of stems, branches and branchlets always developing peduncles and rachises of inflorescences, but branchlets sparse in present material. Leaves of firm texture, entire; radical ones lanceolate, to c. 4,8 cm long and 0,4 (-0,6) cm broad, soon withering, hence inconspicuous or wanting in mature plants. Cauline leaves alternate, c. 10 to 15 all along stems and branches, (0,6-) 1-2,5 (-3,0) cm apart, mostly narrower than basal leaves, 1,8-4,5 x 0,12-0,6 cm, often patent, sometimes ascending from prostrate stems. Blade (narrowly to oblong-)lanceolate or narrow-elliptic, often reddish pointed with a small colourless arista of 0,8-1 mm, sessile or occasionally subsessile with a shortly decurrent petiole, chartaceous to thickly coriaceous, deep to grey-green, later appearing slightly glaucescent on both surfaces, sometimes reddish-tinged on almost parallel margins, evenly pubescent (with hairs as for stems but less dense) on either side only when young, soon glabrescent except in axils, where dense tufts of hairs appear when a new branchlet is sprouting; pale midvein distinctly raised beneath. Fluffy flower spikes numerous, about 30 to 50 per plant, always terminal and solitary, mostly borne upturned at apices of procumbent peduncles, densely flowered and compact for the whole length, initially cone-shaped, then lengthening to short-cylindric with a conoid top, attaining 2,7 cm long x 1,4 cm across when fully opened, whitish-pubescent before and after anthesis. Rachis finally elongate, reaching 1,5 to 2 cm, the woody axis to 0,8 mm in diameter near the middle, yellowish, slightly zigzag, lanate by a soft to fluffy white-woolly tomentum of fine irregularly septate crispy hairs 0,8-1,5 mm long, extremely interwoven for the most part, continued to the 0,4-0,5 mm long pedicels (these jointed above the bracteoles) and concealing basal part of flowers. The bisexual flowers pentamerous (Fig. 2 A), from c. 10 to over 50 per spike, conspicuous by brilliant violet-rose to purplish tepal ends in flowering stages. Subtending bract and bracteoles inconspicuous but well-developed, membranous, translucent-shining, concave, the midrib more or less excurrent, about half as long as the perianth at maturity, entirely glabrous, rather persistent on the woolly rachis after the perianthfalls, unequal in shape. Bract (Fig. 2 B) narrowly ovate to ovate-lanceolate, acuminate with a top c. 0,2 mm long, becoming 2,2-3,0 mm, up to 1,4 mm broad below the middle, the light to dark brown midrib forming an obvious keel, the margins finely serrulate towards or near apex. The two bracteoles (Fig. 2 C) papery and colourless, roundish obovate to subcordate-orbicular, becoming 2,8-3,5 mm long by (2,3-) 2,5-2,8 mm broad at or above the middle, the midrib weak, scarcely cuspidate with a

minute point, evidently serrulate to dentate in about the upper third of margins, completely embracing the perianth in its lowest part. Perianth scarcely exceeding 6 mm long, at first stiffly erect, later campanulately divergent to 2-4 mm across in upper scarious portion, copiously plumose externally, thickened and indurate towards a rounded base of 0,8-1,2 mm diameter, formed by the constricted lowermost parts of tepals; base concave beneath due to sunken attachment of the pedicel, the notch densely surrounded by a ring of bristle-like nodulose hairlets 0,4-0,8 mm long. Tepals (Fig. 2 A) usually subequal, evidently bicolorous when flourishing, dull-purplish turning greenish, exhibiting a coriaceous dorsally pilose central areole, this tapering distally, bordered by membranous glabrous purple to violet-rose (later pale pinkish to stramineous), entire margins gradually dilated and fused apically at the lustrous tip; all perianth-segments three-ribbed in about lower half to two-thirds, the prominent midvein continued to summit, the lateral nerves edging the opaque centre and convergent distally. Tepals free down to an open disk-like base, not bipartite (clawed), their dorsal white heterogeneous vestiture scarcely masking tepal colours. Hairs on tepals knotted (several-celled) straight comparatively thin, of two distinct kinds, unequal in length and structure: (a) feathery erecto-patent trichomes in about the distal halves to two-thirds of tepal minutely spinulose-articulate, (1,8-) 2,5-3,2 mm long and never exceeding the apex, in proximal part of tepals intermingled with or giving way to (b) much shorter, indistinctly and remotely nodulose hairlets about 0,4-1,0 mm long, more or less evanescent with age and ultimately leaving a convex subglabrous spot near base; the scarious marginal zones vanishing basally, enlarging upwards and fusing into the apical glabrous portion attaining 2 mm long in the two outer perianth-segments. These rather uniformly linear, becoming up to 6,2 mm long and c. 1 mm wide at or below middle, hardly contracted (sometimes even widened) to a truncate irregularly erose-denticulate apex, reminiscent in this respect of *Ptilotus symonii* (Benl 1968, Fig. 1 b) or of *P. barkeri* (Benl 1989, Fig. 1 D); inner faces completely glabrous. The three inner tepals linear-subulate, their length and breadth averaging in the ratio 1 to 0,1 (-0,13), distinctly narrowed to an acute or subacute slightly toothed and sometimes inwardly curved tip; two or mostly three segments beset inside with strongly beard-like wool covering the lower region, the crisped hairs copiously borne marginally on one or both sides, thickish, weakly and irregularly septate, averaging 1,2 mm long, surrounding androecium and gynoecium. Distinct internal pubescence occasionally produced in two tepals only, then the outermost segment shaped much like an outer tepal, thus displaying a more or less intermediate character. Androecium and gynoecium (Fig. 2 D) markedly shorter than the perianth. The consistently pentamerous androecium with equally perfect stamens in all flowers examined; filaments upright, diaphanous and flattened, (1,8-) 2,0-2,3 (-2,5) mm long, to c. 0,08 mm broad near middle, somewhat tapering at top, gradually widening downwards to c. 0,2 mm and connate with broad sinuses into a short (c. 0,25 mm) staminal cupule without a free ring or nearly so, adherent to the perianth-base; intervening scale-like teeth or lobes (pseudostaminodes) absent; anthers ellipsoidal, about 0,45 x 0,22 mm, pale yellow in fertile stamens. Gynoecium entirely hairless; ovary obovoid to subclavate, almost sessile when fully developed, 0,8-1,5 mm long and up to 0,8 mm in largest diameter; style undivided, obviously eccentric, straight, 1,5-2,0 mm long on mature ovary, thickened at base to 0,2 mm, persistent; stigma more or less level with the anthers, capitellate-papillose, rather inconspicuous when dried.

Distribution:

Up to the present known only from the type collection with limited range in the Warrego Region (South-west Queensland) where, following the collector's label, it was found growing in a large population ("frequent") 40 km south of Cunnamulla, forming mats in Eucalyptus woodland on sandy loam ground.

The newly established species - observed in a very restricted site - should be regarded as endemic, "Rare" and coded "1RQ38" according to BRIGGS & LEIGH, 1988, unless material from beyond the type area should become available.

Etymology:

Named from the Latin *humifusus*, referring to the habit spread out over the ground.

Affinity:

The present taxon shows resemblance to the endemic *Ptilotus procumbens* (BENL 1983, Fig. 1) from Western Australia as regards the mat-forming habit; however, there is a considerable number of well pronounced differences primarily with respect to floral features, justifying specific rank for our novelty. In *P. procumbens*, bract and bracteoles are ovate-lanceolate, brownish and pilose, in contrast to *P. humifusus* where the bracteoles are roundish and all floral bracts are almost uncoloured and completely lacking indumentum. The tepals of *P. procumbens* bear recurved appendage-like apices, and merely four stamens are consistently functional, whereas in *P. humifusus* the perianth-segments have straight tips, and five stamens are fertile. *P. procumbens* is noteworthy for its short free filaments (0,6 mm) united to an unusually elongated staminal tube (1,3 mm), its stalked ovary being much longer than the sub-central style (s. BENL 1983, Fig. 2 H); in *P. humifusus* 2,3 mm long filaments are fused to a very low (0,25 mm) staminal cupule, and the sessile ovary has a long eccentric style.

From the material seen (comprising specimens measuring between c. 15 and 40 cm across) *Ptilotus humifusus* would appear to be very constant in its features and in its distinctive appearance not comparable with any previously described species within the genus, except *P. procumbens* with which a closer relationship is clearly evident.

P. humifusus has to be inserted in Group VII (Annual herbs usually prostrate to ascending) of our forthcoming record in vol. 5 of "Flora of Australia".

Acknowledgements

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References

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AD98113311



No. 1111
 Loc. Queensland
 George Rogers
 P. humifusus
 Long. 140° 15' E. Lat. 27° 15' S
 Free. August
 Herb. Great Plains Woodhouse
 Australia

Ptilotus humifusus Benl.
 det. pres. - G. BENL. München 1989

Herb. Aust. No. 1
 Bark/Wood
 Leaves
 Flowers Purple becoming blue
 with maturity
 Fruits
 Local names/Uses
 L. 1111
 28/8/89
 Date 89
 Loc. P. E. CORRIE No. 3

STATE HERBARIUM OF SOUTH AUSTRALIA
 ADELAIDE (AD)

Australia Queensland
 Locality 28°15'S
 Barrage Region: 10 km south of Cummins
 Frequent. Eucalyptus woodland, heathland
 Wet plant.
 Flowers purple becoming pale with maturity.

P. E. Corrie 1988 29. vii. 1983
 Duplicates sent to:

Figure 1. *Ptilotus humifusus* Benl. Holotype sheet, AD 98413311. (Photograph K. LIEDL).

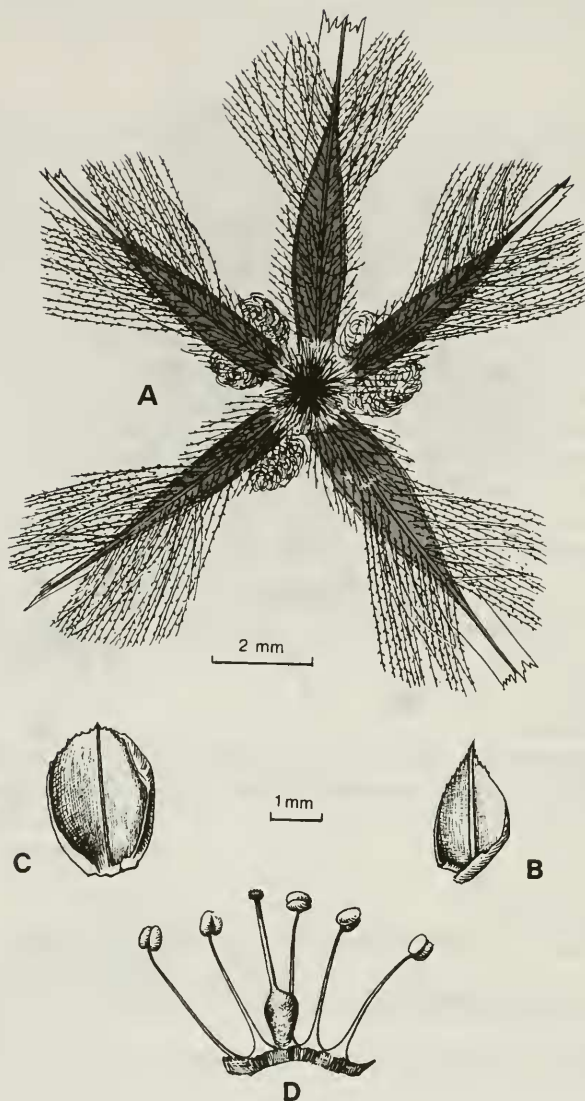


Figure 2. *Ptilotus humifusus* Benl. -- A: Perianth spread open, outer view. B: Bract, inner face. C: Bracteole, inner face. D: Androecium and Gynoecium. (Drawn from holotype by A. BÖHM).